

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

CYBERFONE SYSTEMS, LLC,	)	
	)	
Plaintiff,	)	
	)	
v.	)	C.A. No. 11-827 (SLR)
	)	
CELLCO PARTNERSHIP, et al.,	)	
	)	
Defendants.	)	
<hr/>		
CYBERFONE SYSTEMS, LLC,	)	
	)	
Plaintiff,	)	
	)	
v.	)	C.A. No. 11-830 (SLR)
	)	
AVAYA, INC., et al.,	)	
	)	
Defendants.	)	
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CYBERFONE SYSTEMS, LLC,	)	
	)	
Plaintiff,	)	
	)	
v.	)	C.A. No. 11-833 (SLR)
	)	
SONY ELECTRONICS, INC., et al.,	)	
	)	
Defendants.	)	
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CYBERFONE SYSTEMS, LLC,	)	
	)	
Plaintiff,	)	
	)	
v.	)	C.A. No. 11-834 (SLR)
	)	
FEDERAL EXPRESS CORP., et al.,	)	
	)	
Defendants.	)	

**DEFENDANTS' OPENING BRIEF IN SUPPORT OF  
THEIR PROPOSED EARLY CLAIM CONSTRUCTIONS**

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## I. NATURE AND STAGE OF THE PROCEEDINGS

Plaintiff Cyberfone Systems LLC (“Cyberfone” or “Plaintiff”) asserts one or more of U.S. Patent No. 5,805,676 (“the ’676 Patent”); U.S. Patent No. 5,987,103 (“the ’103 Patent”); U.S. Patent No. 6,044,382 (“the ’382 Patent”); and U.S. Patent No. 7,334,024 (“the ’024 Patent”), (the “Asserted Patents”) against the remaining Defendants in these cases.<sup>1</sup> At the January 31, 2013 status conference, the Court set a briefing and hearing schedule for the construction of two disputed claim terms in the Asserted Patents. (D.I. 330).<sup>2</sup>

A proper construction of these terms would necessarily lead to summary judgment of noninfringement with respect to all but one independent claim of the ’024 Patent asserted against five Defendants. Defendants submit this brief in support of their proposed constructions.

## II. SUMMARY OF THE ARGUMENT

In 1995, Rocco Martino, the sole inventor on the Asserted Patents, argued that certain kinds of “telephone/computer systems” had become too costly. He asserted that, despite the simple nature of the “transaction entry” functionality added to the telephone, these telephone/computer system devices used complex operating systems and applications that required expensive hardware. Martino focused on configuring a device that might cost less to manufacture than existing devices at the time. As he expressed in the Background section for each Asserted Patent:

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<sup>1</sup> Cyberfone originally filed 22 actions against over 160 Defendants alleging infringement of one or more of the Asserted Patents, as well as U.S. Patent No. 8,019,060 (the “’060 Patent”). The Court has since entered judgment of invalidity as to the ’060 Patent.

<sup>2</sup> The Court also permitted Defendants to brief their proposal that two additional claim terms in the ’024 Patent have synonymous constructions to the two disputed terms, and Defendants present those arguments here as well.

A data entry device and associated system is desired which performs a minimal amount of processing at the data entry device so that the data entry device may be as simple and inexpensive as possible, thereby bringing the cost of such a device into a range suitable for most commercial and private uses. ('676 Pat., col. 2:10-15; '103 Pat., col. 22:14-19; '382, col. 2:18-23; '024 Pat., col. 2:24-29.)

Martino's proposed solution was to replace the operating system running application programs with something he called a "form driven operating system." This consisted of simple firmware algorithms—something he called a "transaction assembly server" or "TAS"—which, when combined with the data streams from the form memory, collected and transferred data transactions without any operating system or application programs. According to Martino, his proposed solution required little computing power or memory.<sup>3</sup> As he expressed in the Summary of the Invention section for each Asserted Patent:

[S]ince the data transactions are created ***without the use of an operating system or application*** programs, the transaction entry device is quite simple and inexpensive and may be readily integrated with the customer's desktop telephone or portable telephone. ('676 Pat., col. 2:37-42; '103 Pat., col. 2:39-44; '382 Pat., col. 3:16-20; '024 Pat., col. 2:51-56.)<sup>4</sup>

Martino may have believed that the markets would gravitate toward his solution. But the markets—including those that include the accused products—took a radically different tack. In the years following Martino's first filing, the efficiency and per transistor cost of processors plummeted and memory became significantly faster and cheaper. *See, e.g.*, p. 10 *infra*. Smaller, faster processors and larger memory storage technologies have allowed countless applications to run, efficiently and cost-effectively, on operating systems that are vastly more complex than the

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<sup>3</sup> Martino's proposal for reducing cost was not new. Numerous prior art devices and references taught sending data by using simple firmware in combination with forms, rather than using more complex operating systems running applications. Examples of these references are detailed in Defendants' invalidity contentions.

<sup>4</sup> Emphasis added in the quoted material unless otherwise noted.

commercial operating systems available in 1995. As a result, devices that fit in the palm of one's hand today are faster, more powerful, more complex, and have more memory than the state-of-the-art desktop computers available to consumers in 1995. The accused devices, including smart phones, tablet computers, smart TVs, and ebook readers, have one thing in common—they do not use the “form driven operating system” that Martino claims to have invented.

As discussed below, Defendants' proposed constructions for “form driven operating system” and “transaction assembly server” are rooted in the specifications and prosecution histories of the Asserted Patents and are true to Martino's purported objective in conceiving his claimed inventions. Defendants respectfully request that the Court adopt Defendants' proposed constructions for “form driven operating system” and “transaction assembly server,” and for the two synonymous terms of the '024 patent—“client module” and “computer code for generating a data transaction”—that collectively capture the essence of the claimed inventions.

### **III. STATEMENT OF FACTS**

#### **A. The Asserted Patents Are From The Same Family**

All four Asserted Patents claim priority to the same 1995 application<sup>5</sup> and disclose devices related to the same technical field: creating, transmitting, and storing data transactions. As described in the specification of the first of the four patents, the '676 Patent, the field of the invention encompasses “a data transaction processing system including a transaction entry device” in which “menus are used to navigate the user to forms which facilitate the entry of data.” '676 Pat., col. 1:10-16. The '676 Patent shares an essentially identical specification with

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<sup>5</sup> The original application became the '676 Patent, to which the '103 Patent claims priority as a continuation. The '382 Patent claims priority to the '676 Patent as a continuation-in-part. The '024 Patent claims priority to the '676 Patent through a series of continuations-in-part, but the changes effected in the '024 Patent result in a specification that is substantially identical to the specification for the '676 Patent.

the '103 and '024 Patents. *See e.g.*, Declaration of Regina Murphy ("Murphy Decl.") Exs. A and B (Redlines comparing the specification of the '676 with those of the '103 and '024 Patents). The fourth, the '382 Patent, contains additional disclosures that are not relevant to the arguments in this brief. *See, e.g.*, '382 Pat., col. 1:15-22.<sup>6</sup>

**B. The Patentee Identified An Alleged Problem With "Telephone/Computer" Systems**

The Background of the Invention in each patent describes "telephone/computer systems" at the time as "quite complicated and expensive and . . . limited by the types of operating software" used. *See, e.g.*, '676 Pat., col. 1:48-51. "[S]uch telephone/computer systems . . . are not efficient for creating point-of-entry transactions in typical commercial or private settings. A point-of-entry transaction system is desired which does not have such limitations and which is operating system independent." *Id.*, col. 1:55-60.

The '676 Patent's specification notes that the "[e]limination of the requirement of a conventional operating system and associated application programs for the microcomputer of a data entry device would greatly decrease the costs of such a device." *Id.*, col. 1:61-64. But, it adds, "to date, this has not been possible because the operating system is needed to run application programs which control the data communications . . ." *Id.*, col. 1:64-67. These "application programs require substantial amounts of local memory and substantial processing power for performing the desired functions." *Id.*, col. 2:1-3.

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<sup>6</sup> CyberFone has acknowledged that "the ['382 Patent] specification also describes an alternative embodiment in which 'the TAS of the system may be used in a conventional operating system environment'" but it "has dismissed those defendants whose products involved such an infringement theory to streamline the litigation." (D.I. 328 at 2 n.4.) This description does not appear in the other three patents. *See* Murphy Decl., Ex. C (Redline comparing the specification of the '676 and '382 Patents).

The proposed solution to this perceived problem was a data entry device without “the inherent limitations of conventional point-of-entry systems such as the requirement of a standard operating system.” *Id.*, col. 2:6-13. The data entry device “performs a minimal amount of processing . . . so that [it] may be as simple and inexpensive as possible.” *Id.* Such a device could provide “a wide range of functionality without requiring a local operating system program and a plurality of application programs for implementing each function.” *Id.*, col. 2:15-19. The patent declares that the “invention has been designed to meet these needs.” *Id.*, col. 2:6-20.

### C. The Patents Claim A Simple “Form Driven Operating System”

The Asserted Patents teach the use of a data input device that runs a “form driven operating system”<sup>7</sup> in place of applications running on a conventional/standard operating system. *See id.*, col. 13:50-56. According to the specification, “[t]he telephone/transaction entry device” claimed in the patents “is unique in that it separates the user from the database and provides a simple, user friendly way to enter transaction data without requiring a local operating system to run various application programs.” *See id.*, col. 4:17-23. “[S]ince the data transactions are created without the use of an operating system or application programs, the transaction entry device is quite simple and inexpensive and may be readily integrated with the customer’s desktop telephone or portable telephone.” *Id.*, col. 2: 37-42. The Asserted Patents make clear that this “form driven operating system” constitutes “the sole code used to control [the] microprocessor (i.e., no conventional operating system or application programs are provided).” *Id.*, cols. 13:50-55; 16:11-16.

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<sup>7</sup> Martino coined the term “form driven operating system” as part of the application. It has no plain or ordinary meaning.

The specification defines a form driven operating system as the combination of firmware or microcode stored in a “transaction assembly server (TAS)” and data streams stored in a form memory:

The microcode of the TAS PROM 95 and the parameter streams from the form/menu memory thus operate together as a simple form driven operating system for microprocessor 94 for all applications and is the sole code used to control microprocessor.

*Id.*, col. 13:50-56. As described in the Asserted Patents, the TAS PROM<sup>8</sup> stores “simple firmware algorithms (FIGS 7-10) operating in a kernel fashion for navigating a user through menus and forms provided from form/menu memory.” *Id.*, col. 13:41-44, 65-66.<sup>9</sup> The TAS firmware performs the basic functions of generating a form from a data stream and developing a “data transaction” as the user inputs data into the displayed form. *Id.*, col. 2:55-60.

The specification describes that the form driven operating system is used to create data transactions by presenting forms to the user. *Id.*, cols. 1:15-17, 2:64-67. The form is created by the microcontroller using the TAS firmware and data streams stored in the form memory. See *id.*, cols. 13:46-56, 13:65-14:8.<sup>10</sup> The data entered by the user becomes part of a data transaction that is eventually transmitted to a remote server. *Id.*, col. 17:23-34. The specification defines the combination of the form data and the user input as the data transaction. *Id.*, col. 5:52-55.

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<sup>8</sup> Martino also coined the term “transaction assembly server” or “TAS” as part of the application. It also has no plain or ordinary meaning. PROM, or “programmable read only memory,” is a form of memory hardware that can be programmed only once so that code stored on a PROM cannot be edited.

<sup>9</sup> Firmware consists of computer instructions stored in read-only memory that are used to control hardware devices. See Murphy Decl., Ex. D (excerpts from IEEE Standard Dictionary of Electrical and Electronic Terms (5th ed. 1993)).

<sup>10</sup> The specification states that the terms “form” and “template” are used interchangeably. ’676 Pat., col. 5:55-57.

The patentee repeatedly relied on the definitions of “form driven operating system” and “transaction assembly server (TAS)” in prosecuting the patents. For the form driven operating system, the patentee stated that “the microcode of the TAS PROM 95 and the parameter streams from the form/menu memory 96 . . . operate together as a simple form driven operating system for microprocessor 94 for all applications and is the sole code used to control microprocessor 94.” *See* Murphy Decl., Ex. E at 22 ('676 Pat. File History, March 17, 1997 Office Action Resp.). For the transaction assembly server, the patentee stated that “TAS PROM 95 stores simple firmware algorithms operating in a kernel fashion for navigating a user through menus and forms provided from form/menu memory 96 for customized applications.” *Id.* The patentee also made these statements in a section of the office action response titled “THE INVENTION,” *id.* at 19, and attributed these characteristics to the invention as a whole. *Id.* at 23 (stating that “[s]uch characteristic features of the invention are clearly set forth in [the] independent claims”).

#### **D. The Asserted Patents Contrast The Form Driven Operating System With Operating Systems That Run Applications**

The Asserted Patents consistently contrast the invention embodied in the form driven operating system with operating systems that run application programs. They are consistent and insistent that the claimed invention operates on a device without an operating system running application programs:

- “[S]ince the data transactions are created ***without the use of an operating system or application programs***, the transaction entry device is quite simple and inexpensive . . .” ('676 Pat., col. 2:37-40.)
- “The telephone/transaction entry device and the associated system for storing transaction data in accordance with the invention . . . provides a simple, user friendly way to enter transaction data ***without requiring a local operating system to run various application programs***.” (*Id.*, col. 4:17-22.)
- “The microcode of the TAS PROM 95 and the parameter streams from the form/menu memory 96 thus operate together as a simple form driven operating system for microprocessor 94 for all applications and is the sole code used to

control microprocessor 94 (i.e., ***no conventional operating system or application programs are provided.***)” (*Id.*, col. 13:50-56.)

- “[T]he TAS firmware from TAS PROM 95 and menus and forms from form/menu memory 96 of the invention together ***replace a conventional operating system and individual application programs.***” (*Id.*, col. 14:13-16.)

The common thread joining all of these statements is that Martino’s “form driven operating system” ***does not run application programs.***

The patentee, during the prosecution history, continued to differentiate between a form driven operating system and operating systems that run applications. The patentee added the term “form driven operating system” to the independent claims to overcome a prior art rejection by the Examiner in the ’676 Patent. *See* Murphy Decl., Ex. E at 18-19 (’676 Pat. File History, March 18, 1997 Resp.). As explained to the Patent Office, the patentee “amend[ed] the claim language to specify that the invention uses a simple form driven operating system ***in place of*** the conventional operating system and application programs, thereby eliminating much of the overhead and hardware requirements conventionally required in prior art data transaction terminals.” *Id.* In distinguishing the cited prior art, the patentee argued that the prior art “nowhere discloses a low cost terminal device which uses a form driven operating system ***instead of*** conventional application programs running on a standard operating system to facilitate the entry of data into one or more remote databases.” *Id.* at 27. The Patent Office allowed the claims in response to the patentee’s limiting statements about the narrow scope of the invention and amendments expressly requiring a “form driven operating system.”

Although the Asserted Patents disclaim the use of a conventional/standard operating system in the claimed inventions, they do not explain what makes an operating system

“conventional” or “standard.”<sup>11</sup> *See id.*, col. 1:25-2:20. Instead, the specification describes a conventional/standard operating system at least in terms of its ability to run application programs to generate data transactions. *See '676 Pat.*, cols. 1:61-2:3; 2:15-19; 2:37-42; 4:17-22; 13:54-56.

**E. The Industry Moved Dramatically Away From The Claimed “Form Driven Operating System”**

Martino may have envisioned a world of simple data input devices without operating systems and applications, but in the years that followed his first filing, the world turned to devices that were increasingly complex. Processors became more efficient and their per transistor cost plummeted. *See, e.g.*, Laurie Flynn, Price Wars on Personal Computers Are Already Heating Up Sales for Holiday Season, N.Y. TIMES, Dec. 4, 1995 (noting year-over-year increases in performance and decreases in price) (Murphy Decl., Ex. F). At the same time memory and storage became significantly smaller and cheaper.<sup>12</sup> The smaller, faster CPUs and larger memory storage technologies made it possible to run, efficiently and cost-effectively, operating systems that were far more complex than the commercial operating systems used in 1995.<sup>13</sup>

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<sup>11</sup> A later-filed continuation-in-part application, which became U.S. Patent No. 6,044,382, identifies DOS, Windows 3.11 and Windows 95 as exemplary operating systems that could be loaded onto a data transaction device. *See '382 Pat.*, col. 2:35-39. It characterizes these examples as “full-scale operating system[s].” *See id.*, col. 16:60-62. In the course of this litigation, CyberFone has also admitted that Linux is a “conventional operating system” but nonetheless accused multiple Defendants of infringing for their sale of Linux-based devices.

<sup>12</sup> For a graphical representation of the decline in memory costs, *see* John C. McCallum, Historical Cost of Computer Memory and Storage, available at <http://www.jcmit.com/mem2013.htm> (Murphy Decl., Ex. G).

<sup>13</sup> For example, Windows 95, discussed at note 10, above, required a system with a 386DX (20MHz) processor, 4MB of RAM and 50MB of free storage. Microsoft, Windows 95 Installation Requirements, available at <http://support.microsoft.com/kb/138349>. *See* Murphy Decl., Ex. H. By contrast, Windows 8 requires a 1GHz processor, 1GB of RAM and 16GB of free storage, increases on the order of 50x, 256x and 327x, respectively. Microsoft, Windows 8 (Continued . . .)

Today, devices that fit in the palm of one's hand are faster, more powerful, more complex, and have more memory than the state-of-the-art desktop computers available to consumers in 1995 that the purported invention was intended to replace.<sup>14</sup> These devices are far more complex than the inventions envisioned by the patentee. For example, the specification describes an embodiment of the invention using an Intel 386 processor, running at 20 MHz, along with 1 MB of memory for each of the TAS firmware and the form/menu memory required to operate the claimed invention. *See* '676 Pat., col. 12:58-67. Many of today's smartphones, which are among the accused products, operate with a processor speed of over 1 GHz (50 times faster than the Intel 386) and offer 64 GB of storage (64,000 times more memory storage than that described in the embodiment).<sup>15</sup> *See* Murphy Decl., Ex. J (Apple's A6 Processor Appears Faster than Previously Thought, *available at* [www.news.cnet.com/8301-13579\\_3-57521088-37/apples-a6-processor-appears-faster-than-previously-thought](http://www.news.cnet.com/8301-13579_3-57521088-37/apples-a6-processor-appears-faster-than-previously-thought) (last visited March 13, 2013)).

#### IV. ARGUMENT

Defendants propose to construe: (1) "form driven operating system"; (2) "client module" (which Defendants contend is synonymous with "form driven operating system");

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(... continued)

System Requirements, *available at* <http://windows.microsoft.com/en-us/windows-8/system-requirements>.

<sup>14</sup> *See, e.g.*, Murphy Decl., Ex. I, Charles Arthur, How the Smartphone is Killing the PC, THE GUARDIAN, June 5, 2011 ("today's phones have about the same raw processing power as a laptop from 10 years ago").

<sup>15</sup> Reference to accused products is proper to provide context for the issues in dispute. *See Wilson Sporting Goods Co. v. Hillerich & Bradsby Co.*, 442 F.3d 1322, 1326-27 (Fed. Cir. 2006) ("While a trial court should certainly not prejudge the ultimate infringement analysis by construing claims with an aim to include or exclude an accused product or process, knowledge of that product or process provides meaningful context for . . . claim construction.").

(3) “transaction assembly server (TAS);” and (4) “computer code for generating a data transaction” (synonymous with “TAS”). The proposed constructions are supported by the intrinsic evidence and are consistent with the patentee’s description of the claimed inventions. Moreover, these claim constructions are consistent with the objective of the Asserted Patents to provide “a simple and inexpensive” data transaction device. CyberFone’s claim constructions, in contrast, find little support in, and are inconsistent with, the language of the specifications.

#### A. Legal Standards

Because the Court is well versed in the principles of claim construction, Defendants only address the principles particularly relevant to this dispute.

Although claim terms ordinarily take on “the meaning that a person of ordinary skill in the art would attribute to them,” a different meaning will be attached “when: (1) the patentee has chosen to be his own lexicographer, or (2) a claim term lacks such clarity that there is ‘no meaning by which the scope of the claim may be ascertained from the language used.’” *Novartis Pharma. Corp. v. Abbott Labs.*, 375 F.3d 1328, 1334 (Fed. Cir. 2004) (citing *Johnson Worldwide v. Zebco*, 175 F.3d 985, 990 (Fed. Cir. 1999)). As long as the patentee’s lexicography appears “with reasonable clarity, deliberateness, and precision,” the definition selected by the patent application controls. *Renishaw PLC v. Marposs Societa’ per Azioni*, 158 F.3d 1243, 1249 (Fed. Cir. 1998) (quoting *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994)).

Claim terms should be construed in accordance with the purpose of the claimed invention. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1316 (Fed. Cir. 2005) (en banc); *Renishaw PLC*, 158 F.3d at 1250. Further, statements in the specification “that describe the invention as a whole, rather than statements that describe only preferred embodiments,” are properly found to limit the scope of the invention. *C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 864 (Fed. Cir. 2004); *accord, e.g., Honeywell Int’l, Inc. v. ITT Indus., Inc.*, 452 F.3d 1312, 1318-19 (Fed.

Cir. 2006). Likewise, “[w]here the general summary or description of the invention describes a feature of the invention . . . and criticizes other products . . . that lack that same feature, this operates as a clear disavowal of these other products (and processes using these products).” *Astrazeneca AB v. Mutual Pharm. Co.*, 384 F.3d 1333, 1340 (Fed. Cir. 2004); *accord Microsoft Corp. v. Multi-Tech Sys., Inc.*, 357 F.3d 1340, 1347-48 (Fed. Cir. 2004).

### B. Form Driven Operating System<sup>16</sup>

Defendants' Proposed Construction	CyberFone's Proposed Construction
firmware together with forms that serve as the sole code for controlling a microprocessor, instead of an operating system that runs application programs	Computer code for developing data transactions, which, together with forms, controls the behavior of the microprocessor by logically defining a table of menu options and/or database interfaces. A form driven operating system is not a conventional operating system (such as DOS or Windows).

#### 1. The intrinsic record dictates Defendants' proposed construction

Because Martino coined the term “form driven operating system” in the original application, the term has no plain and ordinary meaning; thus, the definition included in the specification and used in the file history provides the strongest indication of this term’s construction. *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996). Defendants’ proposed construction for “form driven operating system” closely tracks the definition of this term from the specifications and the objectives of the invention described in the intrinsic evidence.

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<sup>16</sup> The term appears in the ’676 Pat., claims 1, 13, 39; the ’103 Pat., claims 1, 15, 18, 45; and the ’382 Pat., claims 1, 13, 19, 22, 30, 34, 36

The original specification<sup>17</sup> defines the term in two locations,<sup>18</sup> and in both locations, the term is described as a combination of the microcode stored in the transaction assembly server (TAS) and the forms stored in the form memory. ‘676 Pat., cols. 13:50-56, 16:11-16. This combination provides the “sole code” that controls the microprocessor for presenting forms to a user and generating data transactions from entered data:

- The microcode of the TAS PROM 95 and the parameter streams from the form/menu memory thus operate together as a simple form driven operating system for microprocessor 94 for all applications and is the *sole code* used to control microprocessor 94 (i.e., *no conventional operating system or application programs are provided*). (‘676 Patent, col. 13:50-56.)
- As noted above, the transaction assembly (application) server (TAS) is a data stream stored in TAS PROM 95 which together with the forms from form/menu memory 96 create a simple form driven operating system which provides the necessary control data (firmware) to microprocessor 94 so that *no conventional operating system is necessary*. (‘676 Patent, col. 16:11-16.)

According to the specification, “the TAS firmware from TAS PROM 95 and menus and forms from form/menu memory 96 of the invention together *replace* a conventional operating system and individual application programs.” *See id.*, col. 14:13-16; ’382 Pat., col. 17:24-27 (emphasis added).

The patentee’s statements to the Patent Office when prosecuting the Asserted Patents confirm the definition of “form driven operating system” found in the specification. For example, the patentee argued during prosecution that “[t]he microcode of the TAS PROM 95 and the parameter streams from the form/menu memory 96 instead operate together as a simple form driven operating system for microprocessor 94,” and that this combination provides “the sole

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<sup>17</sup> The “original specification” is the specification of the ’676 Patent. *See Section III. A. above.*

<sup>18</sup> Although the continuation-in-part ’382 Patent mentions “form driven operating system” in additional locations, the references are consistent with the definitions contained in the original specification. *See ’382 Pat., cols. 16:55-62, 19:44-49.*

code used to control microprocessor 94.” *See* Murphy Decl., Ex. E at 16 (’676 File History, Jan. 3 1997 Resp.); *id.* at 22 (’676 File History, March 13, 1997 Resp.); Ex. K at 24 (’103 File History, February 18, 1998 Resp.). Indeed, the patentee explicitly amended the claims to add the “form driven operating system” limitation to distinguish the claims from prior art that contained operating systems running application programs. *See* Murphy Decl., Ex. E at 18-19 (’676 File History, March 13, 1997 Resp.). The Patent Office allowed the claims only after those express amendments and arguments.

The patentee also explained that replacing the operating system and application programs served the objective of the invention of providing a simple and inexpensive device. *See* ’676 Pat., cols. 1:61-2:1. Eliminating the operating system results in “eliminating much of the overhead and hardware requirements conventionally required in prior art data transaction terminals.” *Id.* The patentee further emphasized the character of the “form driven operating system” in distinguishing numerous prior art references, arguing that these references failed to disclose “using form driven operating systems *instead of* conventional application programs running on a standard operating system to facilitate the entry of data.” *See* Murphy Decl., Ex. E at 33 (’676 Pat. File History, March 18, 1997 Resp.).

For these reasons, Defendants’ proposed construction (“firmware together with forms that serve as the sole code for controlling a microprocessor, instead of an operating system that runs application programs”) adheres closely to the definitions provided by, and the descriptions used in, the intrinsic evidence. Like the specifications and prosecution histories of the Asserted Patents, Defendants’ construction (i) defines the form driven operating system as a combination of firmware and forms, (ii) requires that the form driven operating system provide the sole code

to control the microprocessor, and (iii) meets the objective of providing a simple and inexpensive device by removing the use of an operating system running application programs.

**2. CyberFone's proposed construction ignores the intrinsic evidence**

CyberFone's proposed construction, in contrast, fails to follow the teachings of the intrinsic evidence. CyberFone ignores the import of language in the specification, and effectively brushes aside the amendments and arguments made to overcome the Patent Office's prior art rejections during prosecution of the patent applications.

Critically, CyberFone's construction disregards the most fundamental and absolute requirement of the form driven operating system: that it replaces an operating system that runs application programs. The term "computer code" as used in CyberFone's proposed construction is broad enough to encompass operating system source code written to run and support application programs. Yet, the patentee explicitly stated that an objective of the claimed invention was to *replace* "data entry" application programs. *See* '676 Pat., col. 2:1-3. The specification repeatedly and unequivocally states that the invention operates without the use of application programs. *See* '676 Pat., cols. 2:37-40; 4:17-22; 13:50-56; and 14:13-16. Moreover, the patentee distinguished prior art references that ran application programs. *See* Murphy Decl., Ex. E at 18 ('676 Pat. File History, March 18, 1997 Resp.).

CyberFone's construction also ignores the character of the code in the form driven operating system: the specification consistently associates the TAS portion of the form driven operating system with descriptions such as "firmware," "microcode," and "PROM"—limitations not captured by CyberFone's construction. *See, e.g.*, '676 Pat., cols. 2:52-55, 3:4-6, 3:59, 4:4, 6:21, 6:28, 6:43-54, 12:61, 13:4, 14:5-22, 14:34. CyberFone's reliance on the generic term

“computer code” makes its proposed construction overbroad and inconsistent with the intrinsic record.

The intrinsic evidence is clear that the form driven operating system is a combination of the TAS firmware **and** forms that **together** provide the sole code to control the microprocessor. *See* ’676 Pat., col. 13:50-56. CyberFone’s proposed construction disregards this combination, instead defining the operating system as “**computer code** for developing data transactions.” Although CyberFone’s “computer code” controls the microprocessor “together with forms,” the construction is contrary to the teachings of the specification because it treats the forms as being separate and distinct from the “form driven operating system.” Indeed, by merely requiring that computer code be present “together with forms,” it seeks to write “form driven” out of the claims.

CyberFone’s proposed construction also improperly suggests that the form driven operating system may be computer code that operates by “defining a table of menu options.” While prosecuting the ’103 Patent, the patentee distinguished the claimed invention over a prior art reference that disclosed a system displaying a menu of “software routines” (also referred to as “processes” or computer “subroutines”). *See* Murphy Decl., Ex. K at 30-31 (’103 Pat. File History, Feb. 18, 1998 Preliminary Amendment) (italics in original). According to the patentee, “a **process** is not the same as a **form** as recited in the claims and described with particularity in the disclosure. Rather, the invention is designed to use forms in place of processes so that conventional operating systems are not needed for controlling the processes.” *Id.* at 31 (italics in original). Under CyberFone’s proposed construction, though, a form driven operating system that presents a table of menu options for software routines (e.g., application programs) would meet the limitation, contrary to the patentee’s clear disavowal of this subject matter.

Finally, CyberFone’s construction strips out the requirement that the form driven operating system provide the “sole code” for implementing the claimed invention as the specification and prosecution history require. *See* ’676 Pat., cols. 13:50-55, 16:11-16; Murphy Decl., Ex. E at 22 (’676 Pat. File History, March 17, 1997 Office Action Resp.).

Because the term “computer code” provides no reasonable limitations, CyberFone’s construction attempts to create a purely negative claim element—the form driven operating system is *not* a conventional operating system. But beyond identifying two examples of a conventional operating system, CyberFone does not describe what makes these two (or any other) operating systems “conventional.”

### **3. The ’024 Patent: “client module”**

The core inventive feature claimed in this family of patents is the form driven operating system, which combines firmware from the TAS PROM with forms from the form/menu memory. *See* ’024 Pat., col 14: 25-28. *See also* Section III. above. In claims 1 and 28 of the ’024 Patent, the “client module” describes the form driven operating system operating on the data entry device.

Although neither the specification of the ’024 Patent nor that of the other Asserted Patents explicitly uses the term client module, the Court may look to analogous terms in the specification to construe the term. *Network Commerce, Inc. v. Microsoft Corp.*, 422 F.3d 1353 (Fed. Cir. 2005), *accord Arthrex, Inc. v. Depuy Mitek, Inc.*, 204-CV-328-FTM-99DNF, 2006 WL 4045932 (M.D. Fla. Oct. 16, 2006) (court “may look to other terminology in the specification which describes the same term as used in the claim if the exact term is not found in the specification”). The claims of the ’024 patent make clear that the “client module” is executed by a processor to generate a data transaction. *See* ’024 Pat., col. 24:66-67 (reciting “creating, in a **client module executing on a processor** in said wireless mobile device, a data transaction”); *id.*,

col. 27:38-39 (reciting “a client module ***running on a processor***, said client module generating and sending a data transaction”). This role corresponds to that performed by the form driven operating system, *see id.*, 13:62-14:29; 16:2-29. The specification also makes clear that the only thing that may run on the processor is the form driven operating system. *See* Section III. C. above. Thus, the term “client module” is synonymous with “form driven operating system.”

Construing “client module” according to its ordinary meaning would impose virtually no limit on the scope of the claims. In the software context, a “module” is defined as “a program unit that is discrete and identifiable” or “a logically separable part of a program.” Murphy Decl., Ex. D (Excerpts from the IEEE Standard Dictionary of Electrical and Electronics Terms (5th ed. 1993)). Applied here, such a construction would be divorced from the specification and the inventive purpose because it would encompass any discrete computer code that executes to generate a data transaction, including the operating systems running applications that the patentee explicitly disclaimed. *See* ’676 Pat., col. 2:58-60. Such a construction would render these claims indistinguishable from the prior art and, as a result, fails to preserve the patent’s validity. *Texas Instruments Inc. v. U.S. Intern. Trade Comm’n*, 871 F.2d 1054, 1065 (Fed. Cir. 1989) (“Ambiguous claims, whenever possible, should be construed so as to preserve their validity.”); *ACS Hosp. Systems, Inc. v. Montefiore Hosp.*, 732 F.2d 1572, 1577 (Fed. Cir. 1984) (“[C]laims should be so construed, if possible, as to sustain their validity”).

For these reasons, the term “client module” is coextensive and should be defined as synonymous with “form driven operating system.”

### C. Transaction Assembly Server<sup>19</sup>

Defendants' Proposed Construction	CyberFone's Proposed Construction
the firmware component of a form driven operating system	The portion of a form driven operating system that performs at least the two basic functions of 1) generating a template or form from a data stream; and 2) developing a data transaction as the user inputs data in response to prompts in the template or form.

#### 1. Defendants' proposed construction is in accord with the intrinsic evidence

The intrinsic evidence identifies the transaction assembly server as the firmware portion of the form driven operating system. As discussed above, in the two locations of the original specification that define the term “form driven operating system,” the specification uses the phrase “transaction assembly server” or “TAS” in the definition to identify the firmware part of the form driven operating system. *See* Section III. C. Other portions of the specification also identify the transaction assembly server as the firmware component that stores the control programs for the microprocessor. For example, as disclosed in the specification, “[t]he TAS firmware of the invention stores the options as well as control programs (microcode) for the processor for use with the templates in creating the data transaction.” *See* '676 Pat., col. 6:43-45. Defendants' proposed construction is consistent with these disclosures.

#### 2. CyberFone's proposed construction improperly incorporates limitations already in the claim and merely duplicates CyberFone's proposed construction for “form driven operating system”

CyberFone's proposed construction for “transaction assembly server (TAS)” would also render redundant other limitations in the asserted claims. For example, CyberFone's proposed

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<sup>19</sup> The term appears in the '676 Patent, claims 4, 16; '103 Patent, claims, 4, 19; and '382 Patent, claim 1.

construction states that the TAS generates a form from a data stream, but claim 16 of the '676 Patent already requires that the TAS "controls a process implemented by said microprocessor to present to said display . . . at least one form," making CyberFone's addition superfluous. *See* '676 Pat., col. 27:13-16. Likewise, CyberFone's proposed construction states that the TAS generates a data transaction as the user enters data, but claim 16 already recites "formatting at least said data input by said user in response to said at least one prompt into a data transaction," again making CyberFone's addition superfluous. *Id.*, col. 27:31-33. Thus, CyberFone's proposed construction adds nothing to the limitations already recited in claim 16 other than incorporating the idea that the TAS is an undefined "portion" of the form driven operating system. *See Unique Concepts, Inc. v. Brown*, 939 F.2d 1558, 1561-62 (Fed. Cir. 1991) (merging one element into another is improper because it renders claim terms redundant and violates the "all-elements" rule).

CyberFone's proposed construction for "TAS" also largely replicates its proposed construction of "form driven operating system," which defines a component that uses computer code to generate data transactions and a table of menu options or database entries that are used to create forms to be presented the user. CyberFone similarly defines the TAS as computer code that generates data transactions and creates forms. Under CyberFone's proposed constructions, these terms perform the same functions (creating forms and generating data transactions) and thus fail to provide a distinction that might be helpful to the jury.<sup>20</sup>

Finally, CyberFone's proposed construction fails to capture the character of the TAS as low-level firmware or microcode. CyberFone's proposed construction loosely tracks the

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<sup>20</sup> Defendants' reference to the jury is not intended to imply that the issue of infringement should be tried to a jury. Defendants instead believe that after the claims are properly construed, summary judgment of noninfringement would be appropriate.

language in column 2, lines 55-60, of the '676 Patent. But CyberFone has selectively removed a critical phrase from the specification, as marked below:

The TAS is ~~absolutely self-contained in its relationship to the hardware of the transaction entry device and in general~~ performs the two basic functions of (1) generating a template or form from a data stream and (2) developing a data transaction as the user inputs data in response to 60 prompts in the template or form.

The specification repeatedly makes clear the idea that the TAS is “absolutely self-contained in its relationship to the hardware,” and is always stored in the TAS PROM—programmable read only memory. Code stored in PROM (pronounced P-ROM) is burned into the hardware of the memory circuits and cannot be modified once the circuits in the memory are fused. *See* Murphy Decl., Ex. L (excerpts from Modern Dictionary of Electronics (7th ed. 1999)). This makes sense in the context of the Asserted Patents because the firmware stored in the PROM is low-level code that, combined with forms, functions as a simple form driven operating system. The firmware is “absolutely self-contained in its relationship to the hardware” because it is burned into the TAS PROM and is not expected to need modification for the life of the device. In contrast, any operating system sophisticated enough to run applications is most often stored in a type of memory that permits the system operator to update or modify the code to correct bugs, permits the development and addition of new applications, and allows the operating system itself to store programs and user data for execution. *See, e.g.*, Murphy Decl., Ex. M, Apple, iOS 6 Software Update, available at <http://support.apple.com/kb/DL1578>.

### **3. The '024 Patent: “Computer Program Code for Generating a Data Transaction”**

As discussed above in Section III, the '024 Patent shares the core feature of the '676 Patent: the use of a form driven operating system that combines a transaction assembly server

(TAS) with forms from form memory. In claim 12 of the '024 Patent, the phrase that captures the critical element of the TAS is “computer program code for generating a data transaction.”

This phrase does not appear in the specification or history of the '024 Patent or any of the other Asserted Patents. As discussed above in Section IV. B. 3, when an exact claim term does not appear, the Court may look to other terms that perform a similar function in the specification. The language of claim 12 makes clear that the computer code referenced in the claim is defined by its function: it is the code that is used to generate a data transaction. *See* '024 Pat., col. 26:14-20. The only code described anywhere in the '024 Patent that performs the same function is the TAS firmware:

- The TAS . . . performs the two basic functions of (1) generating a template or form from a data stream and (2) ***developing a data transaction*** as the user inputs data in response to prompts in the template or form. ('676 Pat., col. 2:50-60.)
- The TAS firmware of the invention stores the options as well as control programs (microcode) for the processor for use with the templates in ***creating the data transactions***. ('676 Pat., col. 6:43-45.)
- Thus, the TAS PROM 95 contains control data (firmware) for the microprocessor 94 and resides in each transaction entry device 12 for ***generating a template for a data transaction from a data stream stored in form/menu memory***. ('676 Pat., col. 13:65-14:1.)

The identical function of these elements argues in favor of construing the terms to be synonymous. *Network Commerce, Inc.*, 422 F.3d at 1360-61 (where exact claim term did not appear in specification, looking to “function and description” of specification terms to identify item that “corresponds most closely” to claim term).

**V. CONCLUSION**

Defendants' proposed constructions are true to the intrinsic evidence and to the patentee's objective in conceiving his claimed inventions. CyberFone's muddled, expansive constructions, in contrast, are at odds with the intrinsic evidence. For the foregoing reasons, Defendants respectfully request that the Court adopt their proposed constructions for each of the disputed claim terms.

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7050655.2

**COUNSEL FOR DEFENDANTS IN 11-827 (SLR)**

POTTER ANDERSON & CORROON LLP

*/s/ Richard L. Horwitz*

---

Richard L. Horwitz (#2246)  
David E. Moore (#3983)  
Hercules Plaza, 6th Floor  
1313 N. Market Street  
Wilmington, Delaware 19801  
(302) 984-6000  
rhorwitz@potteranderson.com  
dmoore@potteranderson.com

*Attorneys for Apple Inc.*

OF COUNSEL:

Harrison J. Frahn IV  
Jason M. Bussey  
Jeffrey E. Danley  
SIMPSON THACHER & BARTLETT LLP  
2550 Hanover Street  
Palo Alto, CA 94304  
(650) 251-5000

SEITZ ROSS ARONSTAM & MORITZ LLP

*/s/ Benjamin Schladweiler*

---

Collins J. Seitz Jr. (#2237)  
David E. Ross (#5228)  
Benjamin Schladweiler (#4601)  
100 S. West Street, Suite 400  
Wilmington DE 19801  
(302) 576-1600  
cseitz@seitzross.com  
dross@seitzross.com  
bschladweiler@seitzross.com

*Attorneys for Cellco Partnership*

OF COUNSEL:

Michael K. Kellogg  
Evan T. Leo  
Wan J. Kim  
Michael E. Joffre  
Kiran S. Raj  
KELLOGG, HUBER, HANSEN, TODD, EVANS &  
FIGEL, P.L.L.C.  
1615 M Street, N.W., Suite 400  
Washington, D.C. 20036  
(202) 326-7900

ASHBY & GEDDES

*/s/ Lauren E. Maguire*

---

Steven J. Balick (#2114)  
John G. Day (#2403)  
Lauren E. Maguire (#4261)  
Andrew C. Mayo (#5207)  
500 Delaware Avenue, 8th Floor  
Wilmington, DE 19801  
(302) 654-1888  
sbalick@ashby-geddes.com  
jday@ashby-geddes.com  
lmauguire@ashby-geddes.com  
amayo@ashby-geddes.com

*Attorneys for ZTE (USA) Inc.*

OF COUNSEL:

Barry W. Graham  
Yanbin Xu  
FINNEGAN, HENDERSON, FARABOW,  
GARRETT & DUNNER L.L.P.  
901 New York Avenue, N.W.  
Washington, DC 20004-4413  
(202) 408-4000

MORRIS, NICHOLS, ARSHT & TUNNELL LLP

*/s/ Regina S.E. Murphy*

---

Jack B. Blumenfeld (#1014)  
Karen Jacobs Louden (#2881)  
Regina S.E. Murphy (#5648)  
1201 N. Market Street  
P.O. Box 1347  
Wilmington, DE 19899-1347  
(302) 658-9200  
jblumenfeld@mnat.com  
klouden@mnat.com  
rmurphy@mnat.com

*Attorneys for HTC America, Inc*

RATNERPRESTIA

*/s/ Rex A. Donnelly, IV*

---

Rex A. Donnelly, IV (#3492)  
Andrew J. Koopman (#5288)  
Christopher H. Blaszkowski (#5673)  
1007 Orange Street, Suite 1100  
Wilmington, DE 19801  
(302) 778-2500  
radonnelly@ratnerprestia.com  
akoopman@ratnerprestia.com  
cblaszkowski@ratnerprestia.com

*Attorneys for Hewlett-Packard Company*

OF COUNSEL:

M. Elizabeth Day  
Sal Lim  
Marc C. Belloli  
FEINBERG DAY ALBERTI & THOMPSON LLP  
1600 El Camino Real, Suite 280  
Menlo Park, CA 94025  
(650) 618-4360

MORRIS, NICHOLS, ARSHT & TUNNELL LLP

*/s/ Regina S.E. Murphy*

---

Jack B. Blumenfeld (#1014)  
Karen Jacobs Louden (#2881)  
Regina S.E. Murphy (#5648)  
1201 N. Market Street  
P.O. Box 1347  
Wilmington, DE 19899-1347  
(302) 658-9200  
jblumenfeld@mnat.com  
klouden@mnat.com  
rmurphy@mnat.com

*Attorneys for MetroPCS*

OF COUNSEL:

Yar R. Chaikovsky  
Michael V. Sardina,  
McDERMOTT WILL & EMERY LLP  
275 Middlefield Road, Suite 100  
Menlo Park, CA 94025  
(650) 815-7400

Daniel R. Foster  
McDERMOTT WILL & EMERY LLP  
4 Park Plaza, Suite 1700  
Irvine, CA 92614-2559  
(949) 851-0633

RICHARDS, LAYTON & FINGER, P.A.

*/s/ Elizabeth R. He*

---

Jeffrey L. Moyer (#3309)  
Elizabeth R. He (#5345)  
920 North King Street  
One Rodney Square  
Wilmington, DE 19801  
moyer@rlf.com  
he@rlf.com

*Attorneys for Nokia Inc.*

OF COUNSEL:

Robert F. Perry  
Allison H. Altersohn  
Mark H. Francis  
Charles D. Lee  
KING & SPALDING LLP  
1185 Avenue of the Americas  
New York, NY 10036-4003  
(212) 556-2100

OF COUNSEL:

Steven J. Pollinger  
McKOOL SMITH  
300 W. 6<sup>th</sup> Street, Suite 1700  
Austin, TX 78701  
(512) 692-8700

Brett E. Cooper  
McKOOL SMITH  
One Bryant Park, 47<sup>th</sup> Floor  
New York, NY 10036  
(212) 402-9400

MORRIS JAMES LLP

*/s/ Mary B. Matterer*

---

Richard K. Herrmann (#405)  
Mary B. Matterer (#2696)  
500 Delaware Avenue, Suite 1500  
Wilmington, DE 19801-1494  
rherrmann@morrisjames.com  
mmatterer@morrisjames.com

*Attorneys for Pantech Wireless, Inc.*

OF COUNSEL:

Alan A. Wright  
Cecil S. Chung  
Wayne M. Helge  
H.C. PARK & ASSOCIATES, PLC  
8500 Lessburg Pike, Suite 7500  
Vienna, VA 22182  
(703) 288-5105

RICHARDS, LAYTON & FINGER, P.A.

*/s/ Steven J. Fineman*

---

Gregory P. Williams (#2168)

Steven J. Fineman (#4025)

One Rodney Square

920 North King Street

Wilmington, Delaware 19801

(302) 651-7700

williams@rlf.com

fineman@rlf.com

*Attorneys for United States Cellular  
Corporation*

OF COUNSEL:

Richard J. O'Brien

Robert D. Leighton

SIDLEY AUSTIN LLP

One South Dearborn

Chicago, IL 60603

(312) 853-7000

**COUNSEL FOR DEFENDANTS IN 11-830 (SLR)**

SHAW KELLER LLP

*/s/ John W. Shaw*

---

John W. Shaw (#3362)  
Andrew E. Russell (#5382)  
300 Delaware Avenue, Suite 1120  
Wilmington, DE 19801  
(302) 476-2050  
jshaw@shawkeller.com  
arussell@shawkeller.com

*Attorneys for Alcatel-Lucent USA, Inc.*

DLA PIPER LLP (US)

*/s/ Denise S. Kraft*

---

Denise S. Kraft (#2778)  
Aleine Porterfield (#5053)  
Brian A. Biggs (#5591)  
919 North Market Street, Suite 1500  
Wilmington, DE 19801  
(302) 468-5700  
denise.kraft@dlapiper.com  
aleine.porterfield@dlapiper.com  
brian.biggs@dlapiper.com

*Attorneys for Audiocodes, Inc.*

OF COUNSEL:

Leon Medzhibovsky  
Airina L. Ordrigues  
DLA PIPER LLP (US)  
1251 Avenue of the Americas  
New York, NY 10020  
(212) 335-4500

O'KELLY ERNST & BIELLI, LLC

*/s/ Sean T. O'Kelly*

---

Sean T. O'Kelly (#4349)  
901 North Market Street, Suite 1000  
Wilmington, DE 19801  
(302) 778-4000  
sokelly@oeblegal.com

*Attorneys for Siemens Enterprise  
Communications, Inc.*

OF COUNSEL:

James M. Wodarski  
MINTZ LEVIN COHN FERRIS GLOVSKY  
AND POPEO PC  
One Financial Center  
Boston, MA 02111  
(617) 542-6000

DORSEY & WHITNEY (DELAWARE) LLP

*/s/ Robert W. Mallard*

---

Eric Lopez Schnabel (#3672)  
Robert W. Mallard (#4279)  
300 Delaware Avenue, Suite 1010  
Wilmington, DE 19801  
(302) 425-7171

*Attorneys for Toshiba America Information  
Systems, Inc.*

OF COUNSEL:

Douglas F. Stewart  
Paul T. Meiklejohn  
DORSEY & WHITNEY LLP  
701 Fifth Avenue, Suite 6100  
Seattle, WA 98104  
(206) 903-2381

**COUNSEL FOR DEFENDANTS IN 11-833 (SLR)**

RICHARDS, LAYTON & FINGER, P.A.

*/s/ Anne Shea Gaza*

---

Frederick L. Cottrell, III (#2555)  
Anne Shea Gaza (#4093)  
Elizabeth R. He (#5345)  
One Rodney Square  
920 North King Street  
Wilmington, DE 19801  
(302) 651-7700  
cottrell@rlf.com  
gaza@rlf.com  
he@rlf.com

*Attorneys for Best Buy Purchasing, LLC*

OF COUNSEL:

Christopher K. Larus  
Bryan J. Mechell  
ROBINS, KAPLAN, MILLER & CIRESI L.L.P.  
800 LaSalle Avenue  
2800 LaSalle Plaza  
Minneapolis, MN 55402  
(612) 349-8500

SAUL EWING LLP

*/s/ Whitney W. Deeney*

---

James D. Taylor, Jr. (#4009)  
Jennifer M. Becnel-Guzzo (#4492)  
Whitney W. Deeney (#5155)  
222 Delaware Avenue, Suite 1200  
P.O. Box 1266  
Wilmington, DE 19899  
(302) 421-6800  
jtaylor@saul.com  
jbecnel-guzzo@saul.com  
wdeeney@saul.com

*Attorneys for Denon Electronics (USA), LLC*

OF COUNSEL:

John M. Jackson  
Matt C. Acosta  
Nicole Metcalf  
JACKSON WALKER L.L.P.  
901 Main Street, Suite 6000  
Dallas, TX 75202  
(214) 953-6109

BARNES & THORNBURG LLP

*/s/ Kevin G. Collins*

---

David M. Powlen (#4978)  
Kevin G. Collins (#5149)  
1000 North West Street, Suite 1200  
Wilmington, DE 19801  
(302) 888-4536  
david.powlen@btlaw.com  
kevin.collins@btlaw.com

*Attorneys for Memorex Products, Inc.*

OF COUNSEL:

Annamarie A. Daley  
Aaron A. Myers  
BARNES & THORNBURG LLP  
225 South 6<sup>th</sup> Street, Suite 2800  
Minneapolis, MN 55402  
(612) 333-2111

FOX ROTHSCHILD LLP

*/s/ Gregory B. Williams*

---

Gregory B. Williams (#4195)  
919 North Market Street, Suite 1300  
Wilmington, DE 19801  
(302) 622-4211  
gwilliam@foxrothschild.com

*Attorneys for Mitsubishi Electric Visual  
Solutions America, Inc.*

OF COUNSEL:

Laura L. Chapman  
SHEPPARD, MULLIN, RICHTER  
& HAMPTON LLP  
Four Embarcadero Center, 17<sup>th</sup> Floor  
San Francisco, CA 94111  
(415) 434-9100

Victor de Gyarfas  
FOLEY & LARDNER LLP  
555 South Flower Street, Suite 3500  
Los Angeles, CA 90071-2411  
(213) 972-4500

MORRIS, NICHOLS, ARSHT & TUNNELL LLP

*/s/ Karen Jacobs Louden*

---

Jack B. Blumenfeld (#1014)  
Karen Jacobs Louden (#2881)  
Stephen J. Kraftschik (#5623)  
1201 N. Market Street  
P.O. Box 1347  
Wilmington, DE 19899-1347  
(302) 658-9200  
jblumenfeld@mnat.com  
klouden@mnat.com  
skraftschik@mnat.com

*Attorneys for Pioneer Electronics (USA), Inc.*

OF COUNSEL:

Daniel R. Foster  
Gregory Yoder  
McDERMOTT WILL & EMERY LLP  
4 Park Plaza, Suite 1700  
Irvine, CA 92614-2559  
(949) 851-0633

DORSEY & WHITNEY (DELAWARE) LLP

*/s/ Robert W. Mallard*

---

Robert W. Mallard (#4279)  
300 Delaware Avenue, Suite 1010  
Wilmington, DE 19801  
(302) 425-7171  
mallard.robert@dorsey.com

*Attorneys for Toshiba America Information Systems, Inc.*

OF COUNSEL:

Paul T. Meiklejohn  
Douglas F. Stewart  
DORSEY & WHITNEY LLP  
701 Fifth Avenue, Suite 6100  
Seattle, WA 98104  
(206) 903-2381

YOUNG CONAWAY STARGATT & TAYLOR

*/s/ Pilar G. Kraman*

---

Adam Wyatt Poff (#3990)

Pilar G. Kraman (#5199)

Rodney Square

1000 North King Street

Wilmington, DE 19801

(302) 571-6600

apoff@ycst.com

pkraman@ycst.com

*Attorneys for VIZIO, Inc.*

OF COUNSEL:

Adrian M. Pruetz

Avraham Schwartz

GLASER WEIL FINK JACOBS HOWARD AVCHEN

& SHAPIRO LLP

10250 Constellation Blvd., 19<sup>th</sup> Floor

Los Angeles, CA 90067

(310) 282-6250

Steven R. Hansen

Edward S. Quon

LEE TRAN & LIANG APLC

601 South Figueroa Street, Suite 4025

Los Angeles, California 90017

(213) 612-3737

**COUNSEL FOR DEFENDANTS IN 11-834 (SLR)**

POTTER ANDERSON & CORROON LLP

*/s/ Richard L. Horwitz*

---

Richard L. Horwitz (#2246)  
David E. Moore (#3983)  
Hercules Plaza, 6<sup>th</sup> Floor  
1313 N. Market Street  
Wilmington, DE 19801  
(302) 984-6000  
rhorwitz@potteranderson.com  
dmoores@potteranderson.com

*Attorneys for Amazon.com, Inc.*

OF COUNSEL:

J. David Hadden  
Darren E. Donnelly  
Saina S. Shamilov  
William Moseley  
FENWICK & WEST LLP  
801 California Street  
Mountain View, CA 94041  
(650) 988-8500

POTTER ANDERSON & CORROON, LLP

*/s/ Richard L. Horwitz*

---

Philip A. Rovner (#3215)  
Jonathan A. Choa (#5319)  
1313 North Market Street  
Hercules Plaza, 6<sup>th</sup> Floor  
Wilmington, DE 19801  
provner@potteranderson.com  
jchoa@potteranderson.com

*Attorneys for Barnes & Noble, Inc.*

OF COUNSEL:

Melissa J. Baily  
Adam Botzenhart  
QUINN EMANUEL URQUHART & SULLIVAN LLP  
50 California Street, 22<sup>nd</sup> Floor  
San Francisco, CA 94111  
(415) 875-6600

GREENBERG TRAURIG, LLP

*/s/ Eve H. Ormerod*

---

Gregory E. Stuhlman (#4765)  
Eve H. Ormerod (#5369)  
1007 North Orange Street, Suite 1200  
Wilmington, DE 19801  
(302) 661-7000  
stuhlmang@gtlaw.com  
ormerode@gtlaw.com

*Attorneys for DHL Express (USA), Inc.*

OF COUNSEL:

Michael A. Nicodema  
GREENBERG TRAURIG, LLP  
200 Park Avenue  
Florham Park, NJ 07932  
(973) 360-7932

Kimberly A. Warshawsky  
GREENBERG TRAURIG, LLP  
2375 E. Camelback Rd., Suite 700  
Phoenix, AZ 85016  
(602) 445-8566

Mary-Olga Lovett  
GREENBERG TRAURIG, LLP  
1000 Louisiana Street, Suite 1700  
Houston, TX 77002  
(713) 374-3500

RATNERPRESTIA

*/s/ Rex A. Donnelly, IV*

---

Rex A. Donnelly, IV (#3492)  
Andrew J. Koopman (#5288)  
Christopher H. Blaszkowski (#5673)  
1007 Orange Street, Suite 1100  
Wilmington, DE 19801  
(302) 778-2500  
radonnelly@ratnerprestia.com  
akoopman@ratnerprestia.com  
cblaszkowski@ratnerprestia.com

*Attorneys for Equinox Payments, LLC*

OF COUNSEL:

M. Elizabeth Day  
Sal Lim  
Marc C. Belloli  
FEINBERG DAY ALBERTI & THOMPSON LLP  
1600 El Camino Real, Suite 280  
Menlo Park, CA 94025  
(650) 618-4360

ASHBY & GEDDES

*/s/ Steven J. Balick*

---

Steven J. Balick (#2114)  
John G. Day (#2403)  
Tiffany G. Lydon (#3950)  
Andrew C. Mayo (#5207)  
500 Delaware Avenue, 8<sup>th</sup> Floor  
Wilmington, DE 19801  
(302) 654-1888  
sbalick@ashby-geddes.com  
jday@ashby-geddes.com  
tlydon@ashby-geddes.com  
amayo@ashby-geddes.com

*Attorneys for Federal Express Corporation*

OF COUNSEL:

Jeffrey A. Berkowitz, Esquire  
John S. Sieman, Esquire  
FINNEGAN, HENDERSON, FARABOW, GARRETT  
& DUNNER, LLP  
Two Freedom Square  
11955 Freedom Drive  
Reston, VA 20190-5675  
(571) 203-2700

John M. Williamson, Esquire  
FINNEGAN, HENDERSON, FARABOW, GARRETT  
& DUNNER, LLP  
901 New York Avenue, NW  
Washington, DC 20001-4413  
(202) 408-4000

MORRIS, NICHOLS, ARSHT & TUNNELL LLP

*/s/ Karen Jacobs Louden*

---

Jack B. Blumenfeld (#1014)  
Karen Jacobs Louden (#2881)  
Stephen Kraftschik (#5623)  
1201 North Market Street  
P.O. Box 1347  
Wilmington, DE 19899  
(302) 658-9200  
jblumenfeld@mnat.com  
klouden@mnat.com  
skraftschik@mnat.com

*Attorneys for Hypercom Corporation and  
Verifone Systems, Inc.*

OF COUNSEL:

Owen W. Dukelow  
KOLISCH HARTWELL, P.C.  
520 S.W. Yamhill Street  
200 Pacific Building  
Portland, Oregon 97204  
(503) 224-6655

MORRIS, NICHOLS, ARSHT & TUNNELL LLP

*/s/ Karen Jacobs Louden*

---

Jack B. Blumenfeld (#1014)  
Karen Jacobs Louden (#2881)  
Stephen Kraftschik (#5623)  
1201 N. Market Street  
P.O. Box 1347  
Wilmington, DE 19899-1347  
(302) 658-9200  
jblumenfeld@mnat.com  
klouden@mnat.com  
skraftschik@mnat.com

*Attorneys for Ingenico Corp., Ingenico Inc.  
and United Parcel Service, Inc.*

OF COUNSEL:

John Fry  
Kelly L. Whitehart  
MORRIS, MANNING & MARTIN, LLP  
1600 Atlanta Financial Center  
3343 Peachtree Road, NE  
Atlanta, GA 30326, USA  
(404) 233-7000

MORRIS, NICHOLS, ARSHT & TUNNELL LLP

*/s/ Karen Jacobs Louden*

---

Jack B. Blumenfeld (#1014)  
Karen Jacobs Louden (#2881)  
Stephen Kraftschik (#5623)  
1201 N. Market Street  
P.O. Box 1347  
Wilmington, DE 19899-1347  
(302) 658-9200  
jblumenfeld@mnat.com  
klouden@mnat.com  
skraftschik@mnat.com

*Attorneys for Motorola Solutions Inc.*

OF COUNSEL:

Jonathan E. Retsky  
Thomas M. Williams  
James Winn  
Michael L. Brody  
WINSTON & STRAWN LLP  
35 West Wacker Drive  
Chicago, IL 60601

POTTER ANDERSON & CORROON LLP

*/s/ Richard L. Horwitz*

---

Richard L. Horwitz (#2246)

David E. Moore (#3983)

Hercules Plaza, 6<sup>th</sup> Floor

1313 N. Market Street

Wilmington, DE 19899

(302) 984-6000

[rhorwitz@potteranderson.com](mailto:rhorwitz@potteranderson.com)

[dmoore@potteranderson.com](mailto:dmoore@potteranderson.com)

*Attorneys for Nintendo of America Inc.*

OF COUNSEL:

Timothy S. Teter

Benjamin G. Damstedt

Jeff Walker

COOLEY LLP

Five Palo Alto Square

3000 El Camino Real

Palo Alto, CA 94306

(650) 843-5000